



**Department of
Environmental Protection
Bureau of Land & Water Quality October 2004
O&M Newsletter**

**A monthly newsletter for wastewater discharge licensees, treatment facility operators, and
associated persons**

Index	
Financial Management...	Page 1
For Practice	Page 3
Certification News	Page 3
Approved Training	Page 3
Answers to For Practice	Page 6

Financial Management Planning Article 2



There is an old adage that says, “nobody plans to fail, but many of us fail to plan.” Those of us who were Boy Scouts in our younger

days will remember the Boy Scout motto, “Be Prepared”. Planning is the best way to be prepared for the future. By planning, we can make things happen because we want them to not just wait until “s&%t happens”. That’s not to say that things won’t “happen”, but good planning helps ensure that the number of unpredicted events is minimized.

Planning means looking ahead, deciding how you want things to be and then taking the steps to ensure that things will be the way you want them to be. You probably wouldn’t start a cross-country trip without a road map, so why start

every fiscal year without a plan of what you want to do during that year and a budget that reflects that plan?

In the wastewater treatment facility, planning involves looking at operations and general maintenance expenses, payments on outstanding debt, projecting the cost of any major repairs or equipment replacement that may be required and what amount of money, if any, you want to put away for major capital expenses. You probably have a pretty good handle on the ongoing operations and maintenance costs. You know what your personnel, energy, chemical and other operating costs have been and you can probably forecast those pretty well. Predicting if and when a major piece of equipment will break and how much it will cost to fix or replace it and probably not as easy to do. A good financial plan will include some money for unanticipated “contingencies”, the things you “know” will happen but which you can’t predict with.

Plans fall into three basic categories:

- ? short term plans are usually for a year or less;
- ? mid term plans are usually for a period of three to five years; and,
- ? long-term or strategic plans are usually for ten or twenty years.

You should remember, however, that plans are dynamic and you shouldn’t be locked in by what a plan says. For example, if you plan to do a major renovation on your treatment plant in a certain year but the funds are not available in that year because local revenues won’t support the necessary bond, you have to change your

plans. Any change in a plan should, however, be made for a good, solid reason.

A good plan has a number of benefits to you and your Board of Trustees or Municipal Officials:

- ? it helps you set priorities;
- ? it gives you a clear direction into the future;
- ? it helps you improve your internal management and help you build a good team in your plant;
- ? it helps you deal with change;
- ? it helps you establish better ties to your customers; and,
- ? it helps improve your decision making process, which leads to better public policy choices.

A good plan is based on a careful analysis of your present operation. The acronym often used by planners to describe this analysis is SWOT (Strengths, Weaknesses, Opportunities and Threats). Strengths in your facility could include a good staff of well-trained and dedicated operators who are likely to continue working for you, well maintained treatment and collection systems, and adequate money to run the system as it should be run. If you have a rapid turnover of employees, a treatment plant or sewer system that's in bad shape or money problems, you have weaknesses that must be listed and corrected.

Doing the SWOT analysis should include looking external conditions. Are you adding new customers or losing them? Are you likely to be subject to new permit requirements that will require, at the least, more monitoring and, perhaps, additional treatment? Is an existing industrial customer planning to leave town or is a new industry planning to build in your service area and discharge wastewater into your system? All these things and other external factors should be part of your SWOT analysis.

The SWOT analysis is part of the first step in a 4-part process that answers these questions:

- ? Where are we now?
- ? Where do we want to be?
- ? How do we get there?
- ? How will we measure our progress?

Where are we now?

A truthful SWOT analysis will help answer this question. You should add data about your customers, their current discharge to your system, I&I study results (or estimates if you haven't done an I&I study) and other factors that effect the operation of your plant.

Where do we want to be?

What do you want your facility to look like in five, ten, twenty years? Will major upgrades or renovations be needed and, if so, when? Is your number of customers increasing, decreasing or staying the same? Will new permit requirements or other regulatory changes require additional testing or treatment? If you answer these types of questions, you will have a good idea where your system will be at the end of the planning term. You may want to think about developing a Mission Statement that clearly defines the primary goal of your facility. You might also want to craft a Vision Statement that says what you want to happen. Your plans should always be compared to these statements to make sure that anything you do reflects the chief purpose of your operation and move you toward your vision of where you want to be. Any plan that doesn't meet these criteria should be disregarded.

How do we get there?

Your plan should include objectives for the things you want to get done. For each of these objectives, there should be a clear, specific plan to accomplish each objective. The plan should include a person who is responsible for seeing that each task is completed. The objectives set in your plan must be realistic and recognize the strengths and weaknesses identified in your SWOT analysis. Too many objectives, or objectives that are beyond your personnel or financial resources will mean that things do not get done or do not get done as well as you want.

How will we measure our progress?

Your objectives should be measurable. Rather than saying, "we will treat all the wastewater

that comes into our plant as well as possible”, you should say something like, “for all flows less than 1.5 MGD the effluent will contain less than 15 mg/L of BOD and TSS.” The latter objective is measurable and you can easily determine if you’re meeting the objective or not. A plan without measurable objectives is not very good because you never know if you’ve accomplished what you set out to do.

When you have completed your plan, the next step is to develop a budget to fund the objectives you set in that plan. Budgets are usually set up on an annual basis. Your budget, or fiscal, year may be the calendar year or it may be any 12 month period. In any case, your budget should reflect your plan and, if the budget shows that some of the objectives in your plan are not feasible because you don’t have enough money, you will need to revise your plan.

In next month’s Financial Management article, we’ll talk more about the budgeting process.



For Practice

1. A sample with a pH of 7.0 is
 - a. Neutral
 - b. Alkaline
 - c. Acidic
 - d. Basic
2. Why do wastewater treatment plants use drying beds, filter presses or centrifuges to dewater sludge?
 - a. To reduce the odors from the sludge.
 - b. To decrease the volume of the sludge.
 - c. To decrease the toxicity of the sludge.
 - d. To increase the fluidity of the sludge.

3. The level of one of the ponds in a three pond aerated lagoon treatment system is more than 1 foot below the levels of the other two ponds. The most likely cause of this is
 - a. Uneven flow splitting.
 - b. A leak in the effluent control structure.
 - c. A leak in the liner below the waterline.
 - d. A hydraulic overload caused by high flows to the treatment facility.
4. A treatment plant receiving 225,000 gallons per day needs to be able to store treated effluent for up to 180 days. The treated effluent will be stored in a lagoon 20.66 acres in size. If you need to maintain at least 1.5 foot of freeboard in the lagoon, how deep does it need to be?
 - a. 3.87 feet
 - b. 4.36 feet
 - c. 5.37 feet
 - d. 7.5 feet



Certification News

The Fall 2004 wastewater operator certification exam will be given on **November 10, 2004** in the usual locations. If you signed up for the exam and you haven’t received a letter from us by now, call Leslie Rucker at 287-9031 or Dick Darling at 287-7806 **ASAP**.

Approved Training

September 21, 2004 in Hinckley ME – After SWAP: BMP and Municipal Ordinances to Protect Drinking Water – Sponsored by MRWA – 729-6569 – Approved for 3.5 hours

September 28, 2004 in Old Orchard Beach ME - Sanitary Sewer Overflows & CMOM – Sponsored by NWWTA - 761-2991 – Approved for 4 hours

September 28, 2004 in Bangor ME – After SWAP: BMP and Municipal Ordinances to Protect Drinking Water – Sponsored by MRWA – 729-6569 – Approved for 3.5 hours

October 1,8,15,22, 2004 in Waterville ME - Basic WW Treatment (SAC Course Volume 1) – Sponsored by JETCC/NEIWPCC – 253-8020 – Approved for 24 hours

October 5, 2004 in Brunswick ME - Basic Math – Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 6, 2004 in TBA - Chlorination Systems – Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 7, 2004 in Bangor ME - Basic Math – Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 12, 2004 in Norway ME - Basic Math – Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 12, 2004 in Old Orchard Beach - WORKPLACE SAFETY SERIES #2: Ladder Safety, Fall Protection, Confined Space Retrieval & Chainsaw Safety– Sponsored by NWWTA - 761-2991 – Approved for 4 hours

Oct 13, 2004 in Brewer, MR Troubleshooting Aerated Lagoons - Sponsored by JETCC – 253-8020 – Approved for 6 hours

October 13, 2004 in TBA - Chlorination Systems – Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 20 & 21, 2004 in Presque Isle ME - North Country Convention - Sponsored by JETCC – 253-8020 – Approved for 11 hours

October 20, 2004 in TBA - Chlorination Systems – Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 21 & 22, 2004 in Augusta ME - Laboratory Procedures – Sponsored by JETCC/NEIWPCC – 253-8020 – Approved for 12 hours

October 26, 2004 in Caribou, Maine- The Pump Troubleshooter: Maximizing Your Pumping Efficiency – Sponsored by NEWWA - 508-893-7979 – approved for 6 hours.

October 26, 2004 in Portland ME – Biochemical Oxygen Demand – Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 27, 2004 in TBA - Chlorination Systems – Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 27, 2004 in Topsham ME - Hands On Wastewater Microbiology – Sponsored by NWWTA - 761-2991 – Approved for 5 hours

October 27, 2004 in Bangor, Maine- The Pump Troubleshooter: Maximizing Your Pumping Efficiency – Sponsored by NEWWA - 508-893-7979 – approved for 6 hours.

October 27, 2004 in Bangor and Houlton Maine (by ATM) – Disinfection with Hypochlorination - Sponsored by MRWA – 729-6569 – Approved for 4 hours

October 28, 2004 in Jay ME - Pipe Bursting, a practical and diverse rehab option - – Sponsored by JETCC – 253-8020 – Approved for 6 hours

October 28, 2004 in Topsham ME Hands-On Filament Staining & Identification– Sponsored by NWWTA - 761-2991 – Approved for 5 hours

Nov 4, 2004 in Calais, ME - Using Computer Spreadsheets - Sponsored by JETCC – 253-8020 – Approved for 6 hours

November 3, 2004 in Easton ME –
Biochemical Oxygen Demand – Sponsored by
MRWA – 729-6569 – Approved for 4 hours

Nov 8, 2004 in South Portland ME - Surviving
your Lab Inspection - Sponsored by JETCC –
253-8020 – Approved for 6 hours

November 9, 2004 in Norway, ME Beach -
WORKPLACE SAFETY SERIES #2: Ladder
Safety, Fall Protection, Confined Space
Retrieval & Chainsaw Safety– Sponsored by
NWWTA - 761-2991 – Approved for 4 hours

November 16, 2004 in Brewer ME - Total
Maximum Daily Load: *Preparing For the
Future* – Sponsored by NWWTA - 761-2991 –
Approved for 4 hours

Nov 17, 2004 in North Vassalboro ME -
Instrumentation Measurement & Control w/
Introduction to SCADA - Sponsored by JETCC
– 253-8020 – Approved for 6 hours

November 18, 2004 in Portland ME - Lock-Out
Tag-Out w/ Confined Space Entry Review
SCADA - Sponsored by JETCC – 253-8020 –
Approved for 6 hours

November 18, 2004 in Augusta, ME - Collection
& Distribution Systems Blueprint Reading -
Sponsored by NWWTA - 761-2991 – Approved
for 4 hours

November 30-December 1, 2004 in Freeport ME
– MRWA Annual Conference – Sponsored by
MRWA – 729-6569 - approved for various
hours depending on the class

Dec 2, 2004 in Bangor ME - Surviving your Lab
Inspection (EPA, DEP Safety) - Sponsored by
JETCC – 253-8020 – Approved for 6 hours

December 2, 2004 in Topsham, ME - Preparing
For NPDES Lab Inspection & How To Write
Lab SOPs- Sponsored by NWWTA - 761-2991
– Approved for 4 hours

December 7, 2004 in Brewer ME Beach -
WORKPLACE SAFETY SERIES #2: Ladder
Safety, Fall Protection, Confined Space
Retrieval & Chainsaw Safety– Sponsored by
NWWTA - 761-2991 – Approved for 4 hours

December 7, 2004 in TBA Basic Pipe
Installation – Sponsored by MRWA – 729-6569
– Approved for 4 hours

December 8, 2004 in TBA Basic Pipe
Installation – Sponsored by MRWA – 729-6569
– Approved for 4 hours

8, 2004 in Portland ME - Use of polymers in the
WWTF (½ day) - Sponsored by JETCC – 253-
8020 – Approved for 3 hours

December 8, 2004 in Portland ME - Coagulants
& Flocculants in water applications (½ day)
SCADA - Sponsored by JETCC – 253-8020 –
Approved for 6 hours

December 8, 2004 in Presque Isle, ME -
Preparing For NPDES Lab Inspection & How
To Write Lab SOPs – Sponsored by NWWTA -
761-2991 – Approved for 4 hours

December 9, 2004 in TBA Basic Pipe
Installation – Sponsored by MRWA – 729-6569
– Approved for 4 hours

Dec 14, 2004 in Augusta ME - Hands–on GIS
101for infrastructure management
SCADA - Sponsored by JETCC – 253-8020 –
Approved for 6 hours

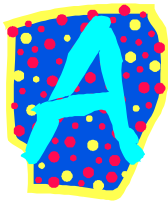
December 14, 2004 in Caribou ME - Basic First
Aid – Sponsored by MRWA – 729-6569 –
Approved for 8 hours

December 14, 2004 in Norway, ME - Preparing
For NPDES Lab Inspection & How To Write
Lab SOPs– Sponsored by NWWTA - 761-2991
– Approved for 4 hours

December 15, 2004 in Old Orchard Beach ME -
Total Maximum Daily Load: *Preparing For the
Future* – Sponsored by NWWTA - 761-2991 –
Approved for 4 hours

December 15, 2004 in TBA - Basic First Aid –
Sponsored by MRWA – 729-6569 – Approved
for 8 hours

December 16, 2004 in TBA - Basic First Aid –
Sponsored by MRWA – 729-6569 – Approved
for 8 hours



Answers to *For Practice*:

1. a. The pH scale runs from 1 to 14 with 7 being the midpoint which is neutral, neither acidic nor alkaline
2. b. Sludge is dewatered to decrease its volume to decrease the expense of hauling and disposal.
3. c. If one pond in a lagoon system is significantly lower than the others, the most likely cause is a leak in the liner.
4. c. The area of the lagoon is 20.67 acres x 43,450 sq.ft./acre = 900,000 sq.ft.
The storage needed is 0.225 MGD x 180 days = 27 million gallons / 7.5 gal/cu.ft. = 5,400,00 cu.ft.
5,400,000 cu.ft./900,000 sq.ft = 6 feet = depth of water when the lagoon is full.
If 1.5 foot of freeboard is required, the total depth of the lagoon must be:
6 ft. of water + 1.5 ft. freeboard = 7.5 ft.